

STB DOCKET NO. 41185

ARIZONA PUBLIC SERVICE COMPANY AND PACIFICORP
v.
THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY

Decided April 13, 1998

The Surface Transportation Board reopens this proceeding, reaffirms its prior finding that the defendant railroad has market dominance over the transportation at issue, and revises its maximum reasonable rate prescription and reparations determinations.

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BY THE BOARD:¹

In *Arizona Public Service Co. v. Atchison, T. & SF. Ry. Co.*, 2 S.T.B. 367 (1997) ('97 Decision), we found that the defendant, The Atchison, Topeka and Santa Fe Railway Company (Santa Fe),² has market dominance over the trainload transportation of coal between the McKinley Mine, located near Gallup, NM and owned by the Pittsburgh & Midway Coal Mining Company (P&M), and a generating station at Joseph City, AZ, owned by the complainants, Arizona Public Service Company and PacifiCorp (collectively, Arizona). We further found that the rates charged by Santa Fe for this transportation are unreasonable, based upon a stand-alone cost (SAC) analysis for a hypothetical stand-alone railroad (SARR) called the "Arizona & Gallup Railroad" (AGRR). Accordingly, we awarded reparations (with interest) for past movements and prescribed maximum reasonable rates for future movements.³ The factual background, procedural history, legal framework, and decisional methodology of this case are set forth in the '97 Decision and will not be repeated here.

By petition filed August 19, 1997, Santa Fe requests reopening under 49 CFR 1115.3, alleging material error, new evidence, and materially changed circumstances. Santa Fe disputes our findings as to market dominance, the traffic assumptions used in our SAC analysis, and the use of a modified perpetual SAC model. The carrier also alleges various "technical errors" in our SAC calculation. By reply filed September 8, 1997, Arizona opposes Santa Fe's petition.

¹ Because this proceeding was pending with the Interstate Commerce Commission prior to January 1, 1996, we apply the law in effect prior to the *ICC Termination Act of 1995*, Pub. L. No. 104-88, 109 Stat. 803 (the *ICCTA*), pursuant to Section 204(b)(1) of that act, and citations are to the former sections of the statute unless otherwise indicated.

² Santa Fe has now merged with the Burlington Northern Railroad Company to form the Burlington Northern Santa Fe Railway Company. Because this controversy arose before the merger, we will continue to refer to defendant as Santa Fe.

³ In a subsequent decision, served September 3, 1997, we stayed the reparations award on the condition that the railroad pay refunds (with interest) if our reparations order is sustained. We declined to stay our rate prescription, on the shipper's agreement to keep account of the funds at issue and reimburse the railroad (with interest) for the difference should a higher rate ultimately be found reasonable.

DISCUSSION

I. Market Dominance

We must first consider Santa Fe's challenge to our market dominance finding because, if the carrier lacks market dominance over this traffic, we lack jurisdiction to examine the reasonableness of its rates.⁴ Santa Fe argues that there is both product competition (available substitute power) and geographic competition (coal available from other sources) that preclude market dominance over this traffic.

A. Product Competition

Santa Fe renews its argument that the Cholla plant is an inefficient, high-cost source of power and that the availability of lower-cost substitute power from other (off-system) sources, such as hydroelectric power purchased wholesale from the grid, provides effective product competition.⁵ Santa Fe asserts that the Cholla plant had an average capacity factor of only 59% from 1989 to 1996.⁶ However, Arizona has shown that Cholla is a base load plant which operated at an actual average capacity of 72.1% for that time period.⁷ Moreover, given that 1995 and 1996 were years when, due to heavy precipitation, abnormal amounts of hydroelectric power were available,⁸ the plant's average capacity factor for the period 1989-1994, which was 76.9%, is more instructive.

Although Cholla is not the most efficient, least-cost coal-fired plant within the WSCC, Santa Fe has not shown that the plant is so inefficient that its output can be considered readily replaceable. Santa Fe produced tables comparing the

⁴ See, prior 49 U.S.C. 10701a(b)(1), recodified as 49 U.S.C. 10701(d)(1).

⁵ Santa Fe does not dispute our earlier conclusion that Arizona generally does not possess alternate sources of power within its internal network that could generate electricity at a lower cost than the Cholla plant.

⁶ Santa Fe Petition, v.s. of McMahan and Vaninetti at 13 and Exh. 3.

⁷ Arizona Reply, v.s. of Bhatti at 4-6.

⁸ Arizona presented evidence that 1995 was the second wettest year in recorded history. Arizona Reply, v.s. of Bhatti at 19. The unusual excess supply of hydroelectric power in 1995 and 1996 displaced fossil fuel generation throughout the Western Systems Coordinating Council (WSCC), not just at the Cholla plant. The displacement caused lower outputs even for WSCC plants with production costs lower than the Cholla plant. The average capacity factor for coal-fired plants in the WSCC dropped to 67% in 1995 and 68% in 1996. Arizona Reply, v.s. of Bhatti, at 3-4.

average and incremental power production costs of WSCC plants.⁹ This evidence shows that, for coal-fired units, the Cholla plant ranks 27 out of 36 in average production cost and 25 out of 36 in incremental marginal cost. While Cholla is in the bottom third in terms of efficiency, the average and marginal costs of the Cholla plant do not differ greatly from the plants above and below it on the lists. If Cholla were obsolete, as Santa Fe claims, then the plants below it in these cost tables would be also. Their continued operation, however, is evidence that replacement power in the WSCC region is not as easy to obtain as Santa Fe suggests. Furthermore, Cholla's rank is in part a function of the price it pays Santa Fe to deliver coal. We note that the reduction in rate levels we have found appropriate will improve Cholla's ranking within the WSCC.

It is true that when precipitation is plentiful, hydroelectric power displaces some power that would be produced by the Cholla plant.¹⁰ We agree with Arizona, however, that the availability of substitute hydroelectric power, which depends on weather conditions, is too unpredictable to be relied upon for long-term planning. Moreover, during the summer months, WSCC transmission constraints limit Arizona's ability to import power,¹¹ further undercutting Santa Fe's grid replacement argument.

Finally, Santa Fe's arguments regarding the comparative costs of power from the grid¹² are unconvincing. Santa Fe's arguments are based on the spot price of power when the grid is functioning normally, without unusual outages or demands. But power spot prices are sensitive to demand changes. The removal of Cholla-generated power would change the relationship between demand and supply, thereby increasing the price for wholesale power.¹³ Further, spot prices do not reflect firm commitments, and substantial spot power cannot be counted on when there are unusual outages or periods of peak demand. It would not be prudent for Arizona to presume that it would be able to fully meet its native load by obtaining grid replacement power for Cholla's full output at today's grid prices, and we will not presume so here.

⁹ Santa Fe Petition, v.s. of McMahan and Vaninetti, Exhs. 1 & 2.

¹⁰ Despite the availability of hydroelectric power, in 1995 and 1996, the Cholla plant burned in excess of 2.4 million tons of coal its purchases under a long-term contract with the McKinley mine.

¹¹ Arizona Reply, v.s. of Bhatti, at 8.

¹² Santa Fe Petition, v.s. of McMahan and Vaninetti at 8-11, 22-23 and Exh. 1, 5 & 6.

¹³ Arizona Reply, v.s. of Bhatti at 8-9. See also, Santa Fe Petition, v.s. of McMahan and Vaninetti at 22.

In short, Santa Fe has not met its burden of showing that product competition has developed to the point where the utility can be substantially indifferent to whether it produces power from coal transported by Santa Fe or obtains power from other means not under Santa Fe's control.

B. Geographic Competition

Santa Fe argues that Arizona could obtain coal from the Powder River Basin at a lower delivered (coal plus transportation) price than the delivered price it now pays for coal from the McKinley Mine.¹⁴ This does not show the presence of effective geographic competition, however, because, whatever the origin, the coal must be transported by Santa Fe, the only rail carrier serving Joseph City, AZ. Use of an alternate source of coal thus would not free Arizona from its dependence on the pricing of this bottleneck carrier, and Santa Fe's resulting market dominance over rail traffic destined to the Cholla plant.

II. Traffic Assumptions Used in SAC Analysis

Santa Fe argues that our '97 *Decision* overstated the traffic volumes and resulting revenues that would be available to the AGRR and thus overstates the profitability of serving the AGRR traffic group. Santa Fe asserts that shipments transported since the close of the record have fallen short of the volumes presumed in the '97 *Decision* and that forecasted future traffic volumes will not be achieved.

A. Recalculation to Incorporate Actual Traffic Volumes

Santa Fe complains that actual traffic volumes to the two utilities in the AGRR traffic group--the Coronado, AZ plant of the Salt River Project Agricultural Improvement and Power District (Salt River) and Arizona's Cholla plant--fell short of the traffic estimates used in the '97 *Decision* for the years 1995, 1996, and 1997. Santa Fe suggests that we have a duty to reopen and recalculate our rate reparation and prescription orders whenever actual traffic volumes and revenues do not correspond to the levels assumed in our SAC analysis.¹⁵ However, actual traffic figures will almost always invariably fail to match exactly with yearly (or multi-year) traffic projections. Under Santa Fe's

¹⁴ Santa Fe Petition, v.s. of McMahan and Vaninetti at 32-34.

¹⁵ Santa Fe Petition at 8.

logic, we would need to reopen and recalculate the cumulative difference between SAC revenues and costs for the entire (20-year) SAC period each time that actual traffic volumes for a new period become available. Like the classical figure Penelope, we would be faced with constantly restarting our task anew, never able to bring to a conclusion a rate case using a SAC analysis that includes future traffic estimates. Thus, we cannot accept the notion that any discrepancy between forecasted and actual traffic volumes warrants reopening and recalculation of a SAC analysis.¹⁶ Rather, we must approach petitions to reopen on this ground cautiously, on a case-by-case basis, striving to achieve an appropriate balance between the interests of fairness to all parties and of administrative finality and repose. We must consider not only the magnitude, but also the cause and duration of the discrepancies before deciding whether they warrant reopening and revision of the underlying SAC calculations.

In this case, while the drop in coal shipments to the Cholla and Coronado plants during 1995-1997 was not negligible,¹⁷ we are not persuaded that it reflects continuing, long-term shifts in the two shippers' traffic patterns. To the contrary, as noted above, the reduction in 1995 and 1996 shipments to both plants is attributable primarily to an unusual precipitation pattern which resulted in a plentiful inexpensive supply of hydroelectric power that displaced fossil fuel generation throughout the WSCC.¹⁸ The reduction in 1996 shipments to the Cholla plant was further affected by (1) a one-time decision to reduce the stockpile of coal at Cholla¹⁹ and (2) a 59-day equipment breakdown at Cholla

¹⁶ Santa Fe relies on our prior statements that the parties may seek to have the proceeding reopened to consider significant changes. '97 *Decision*, 2 S.T.B. at 384, 385, 395. The significant changes we were referring to involve important long-term shifts in traffic patterns, not short-term, year-to-year fluctuations that do not undermine our long-term projections.

¹⁷ According to Santa Fe, the Cholla plant fell short of the 3.5 million tons per year forecasted traffic by about 1 million tons per year in 1995 and 1996. Santa Fe Petition at 7. However, our SAC analysis used traffic projections of only 2.475 million tons for Cholla in 1995. '97 *Decision*, 2 S.T.B. at 382. In its petition, Santa Fe also states that the Coronado plant, which both parties had agreed would receive 2.5 million tons per year, received only 2 million tons in 1995 and 1.5 million tons in 1996. Santa Fe Petition at 7. Santa Fe asserts that, while volumes increased in the first part of 1997, they would still fall short of the levels used in the SAC analysis. *Id.* However, Arizona states that the 1997 shortfall in tonnages should be "slight," with Cholla expected to receive 3.4 million tons and Coronado 2.2 million tons. Arizona Reply at ii, 4.

¹⁸ While this winter's El Niño is likely to continue this trend in 1998, we have no evidence of a long-term shift in weather patterns. Rather, the appearance of this winter's El Niño is more likely part of the normal fluctuation of weather which in some years results in greater precipitation and in others less precipitation than the long-term average.

¹⁹ Arizona Reply, v.s. of Sauvageau at 2.

(which reduced 1996 volumes by an additional 160,000 tons),²⁰ both of which were also temporary circumstances. Arizona has shown that 1997 shipments to Cholla were likely to be closer to the forecast levels used in our SAC analysis.²¹ Moreover, 1997 shipments from the McKinley Mine would have been even greater but for a labor shortage at the mine and locomotive and crew shortages at Santa Fe.²²

In short, given these various circumstances, there is no reason to believe that the historical, pre-1995 traffic levels upon which the SAC traffic forecasts are based do not continue to be representative of the long-term traffic needs of these two plants.

B. Forecasts of Future Traffic

Santa Fe argues that the volumes of traffic forecasted for the AGRR would not be achieved for several reasons. First, it asserts that the Cholla and Coronado plants are inefficient and that production at these plants will fall drastically, reducing the level of coal required at these plants in the future.²³ Second, it claims that coal from the McKinley Mine is so expensive that the two utilities will not continue to obtain coal from that mine after their current coal supply contracts expire.²⁴ Third, it hypothesizes that the McKinley Mine would not be able to fulfill the coal volumes forecasted in the SAC analysis for the full 20-year SAC period.²⁵ We address each of these arguments in turn.

1. Utilities' Coal Needs

For the same reasons discussed above in relation to Santa Fe's product competition arguments, we reject Santa Fe's underlying premise that the Cholla and Coronado plants are so inefficient as to warrant replacement of the power produced by these plants with power from the grid. Moreover, as discussed above, we do not perceive a sustained downturn in production from these plants. Thus, we reject Santa Fe's argument that the coal needs of the two utilities in the AGRR traffic group will be less than forecasted over the full 20-year SAC analysis period.

²⁰ Arizona Reply, v.s. of Sauvageau, at 3.

²¹ Arizona Reply, v.s. of Sauvageau at 3-5; v.s. of Dix at 5.

²² Arizona Reply, v.s. of Reeves at 3.

²³ Santa Fe Petition at 9-10.

²⁴ *Id.* at 10-11.

²⁵ *Id.* at 12-13.

2. Demand for McKinley Mine Coal

As noted in our '97 *Decision*, the McKinley Mine's current contract to supply the Cholla plant will expire in the year 2000 and its current long-term contract to supply the Coronado plant will expire in 2006. Santa Fe renews its argument that the two utilities will arrange for alternate coal sources when these contracts expire because the McKinley Mine is a high-cost operation that cannot sell coal at current market prices.

Arizona counters with the testimony of a P&M official disputing Santa Fe's cost-of-production estimates for the McKinley Mine.²⁶ Arizona also points out that, as recently as 1996, the McKinley Mine retained the business of the Arizona Electric Power Cooperative with a new long-term supply contract, evidencing the competitiveness of that mine's coal.²⁷

Santa Fe asserts that Arizona will shift its coal source from the McKinley Mine to the Powder River Basin.²⁸ Arizona admits that it has recently blended-in coal from the Powder River Basin to meet the needs of the Cholla plant,²⁹ but states that it is uncertain that the Cholla plant could fully substitute coal from the Powder River Basin without heat rate deterioration and capital expenditures.³⁰ According to Arizona, the Cholla plant met the great bulk of its needs in 1997 (about 3.1 million tons) from the McKinley Mine and received only an additional 300,000 tons from the Powder River Basin.³¹ The utility states that it tried to purchase an even higher percentage of its tonnage from the McKinley Mine in 1997--3.6 million tons from McKinley plus 200,000 tons from the Powder River Basin--but that operational constraints at the railroad and the mine were responsible for the lower volume.³²

To support its argument that Arizona will shift its source of coal to the Powder River Basin, Santa Fe states that "existing rate levels [for Powder River Basin coal] (including many movements involving, as in the case of Cholla, a solely served generating plant) in railroad owned cars are approximately \$14.50 per ton, or 12.1 mills per ton-mile, for hauls of 1,200 miles (roughly the mileage

²⁶ Arizona Reply, v.s. of Dix at 7.

²⁷ Arizona Reply, v.s. of Dix at 6.

²⁸ Santa Fe Petition, v.s. of McMahan and Vaninetti at 35 n.15&16.

²⁹ Arizona Reply, v.s. of Sauvageau, at 4-5. Sauvageau states that the utility has recently used a mix of 80% McKinley Mine - 20% Powder River Basin coal. *Id.* at 7 n.1.

³⁰ Arizona Reply, v.s. of Sauvageau at 7 n.1.

³¹ Arizona Reply, v.s. of Sauvageau at 5.

³² Arizona Reply, v.s. of Sauvageau at 3-4; v.s. of Reeves at 3. The AGRR is designed to be able to transport whatever volume of coal is needed from McKinley. Thus, the operational problems experienced by Santa Fe would not constrain the amount of coal the AGRR could move to Cholla.

between [Powder River Basin] and Cholla).³³ However, as Arizona points out, this is an average figure including both captive and competitive movements. It is to be expected that captive movements would pay rates significantly above the average. In the case of *West Texas Utilities*, a captive utility, the 12 mill rate it now receives is a rate that we prescribed in a complaint proceeding.³⁴

Santa Fe also reasserts its argument that Salt River will replace coal shipped from the McKinley Mine with its own Fence Lake reserves to fuel its Coronado plant and states that, contrary to our understanding in the '97 *Decision*, Salt River is actively pursuing that course of action.³⁵ While it appears that Salt River is indeed continuing to pursue its Fence Lake option, we have no reason to question the assertion of Salt River manager Reeves that Salt River has not yet decided whether to make the additional expenditures necessary to proceed with construction and operation of the Fence Lake coal mine, and its associated railroad.³⁶ The coal mined at the McKinley Mine is of a higher quality in terms of BTU content, sulfur content, and coal quality characteristics relating to boiler compatibility.³⁷ It has not been shown that Fence Lake coal could overcome these advantages with significantly lower transportation costs (taking into account Salt River's sunk costs in its 42-mile private rail track from East Coronado Jct. to the Coronado plant) and/or substantially lower mining costs.

While we cannot guarantee Santa Fe that these two utilities will continue to obtain their coal from the McKinley Mine indefinitely, we also cannot guarantee that they will not.³⁸ We simply cannot predict the future with the certainty that Santa Fe demands; but neither can the parties, as the conflicting and inconclusive evidence here demonstrates. More importantly, we do not believe that absolute certainty about the future is required before we can conduct the long-term analysis needed to apply a SAC rate constraint. Reasonable assumptions are inherent in any SAC analysis,³⁹ and we are satisfied that, on this record, it is not unreasonable to assume that the current, well-established traffic patterns of these two utilities will continue indefinitely. We require evidence far

³³ Santa Fe Petition, v.s. of McMahan and Vaninetti at 31-33.

³⁴ Arizona Reply, v.s. of Sauvageau at 9-10.

³⁵ Santa Fe Petition, v.s. McMahan and Vaninetti at 40-42 & Exh. 9.

³⁶ Arizona Reply, v.s. Reeves at 5.

³⁷ *Id.* at 3.

³⁸ We note that Santa Fe need not recoup all of its investment in the line serving the Cholla plant while that plant receives its coal from the McKinley Mine. Regardless of the source of coal, Santa Fe provides the only rail service to Cholla and thus should be able to continue to earn a return on its investment.

³⁹ *Coal Rate Guidelines*, 1 I.C.C.2d 520, 542-43 (1985), *aff'd sub nom. Consolidated Rail Corp. v. United States*, 812 F.2d 1444 (3d Cir. 1987).

firmer than Santa Fe's continued speculation concerning the sources of Coronado's future coal supplies before we would alter the SAC analysis we have accepted here.

3. Supply of McKinley Mine Coal

Santa Fe further argues that we were overly optimistic in finding that P&M would obtain an alternate source of coal from the Navajo Nation before the predicted depletion within 10 years of coal reserves in the McKinley Mine. The carrier asserts that, nearly 2 years after witness Dix (a P&M official) testified about the likelihood of P&M acquiring rights to adjacent Navajo Nation coal reserves, the mining company has made no progress in this effort.⁴⁰

For the reasons stated in the '97 *Decision*, we do not find it unreasonable to assume that P&M will be successful in obtaining an adequate source of replacement coal from the coal reserves of the Navajo Nation. Witness Dix states that the mine has received one drilling permit from the Navajo Nation and that P&M expected to begin exploration under another permit before the end of 1997.⁴¹ While Santa Fe may not consider this to be sufficient progress toward development of the Navajo reserves, the mine has almost 10 years (until 2007) to acquire and develop those reserves before its existing reserves are estimated to be exhausted.

Of course, we cannot rule out entirely the possibility that P&M ultimately might not acquire and mine the additional coal fields. It is also possible that one or both utilities could switch to other sources of coal prior to the end of the 20-year SAC analysis period from some other reason. It is best, however, to respond to such changes if and when they occur,⁴² given that we cannot

⁴⁰ Santa Fe Petition, v.s. of McMahan and Vaninette at 36.

⁴¹ Arizona Reply, v.s. of Dix at 3-4.

⁴² If coal were no longer transported from the McKinley Mine to the Cholla plant, our prescription of a rate for this transportation would be mooted as of that point. Short of that point, if traffic from the McKinley Mine to the Cholla or Coronado plants were permanently reduced below the levels upon which our SAC analysis is predicated, then the parties can and should have this proceeding reopened and the SAC analysis revised appropriately.

Santa Fe argues that the opportunity to reopen this proceeding to revise our rate prescription in light of future developments does not adequately protect the carrier. Santa Fe Petition, at 14-16. Santa Fe reasons that we would not be able to reimburse it for reparations or reduced rates that are based on overly optimistic traffic volumes, but that the utility would be able to obtain further reparations and altered rate relief if traffic volumes are greater than predicted. Santa Fe argues that, in view of this alleged dichotomy of remedies for erroneous predictions, we should resolve any uncertainties over future traffic volumes in favor of the carrier.

(continued...)

determine the nature, extent, and timing of future changes, if any, that might occur. As we stated in the '97 *Decision*, 2 S.T.B. at 385, assuming continuation of the status quo (unless and until shown to be an unreasonable assumption) is consistent with our responsibility to determine the regulatory consequences of the carrier's current pricing of its current traffic.

III. SAC Analysis Period

Santa Fe disagrees with the use of a 20-year SAC model. It argues that, because rail assets are extremely long-lived, it is necessary to examine the financial viability of the AGRR in perpetuity to ensure that all investment costs are recovered. We previously have rejected this argument, which would require that we project revenues and costs into the indefinite future.⁴³ The petition to reopen raises no new arguments that would cause us to abandon the traditional use of a modified perpetual SAC model.

For practical and policy reasons, rather than attempting to project all of the variables (revenues, operating expenses, tons, taxes, etc.) beyond a 20-year period, we generally assume that a prudent rail system, while continuing to operate beyond the 20-year analysis period, would take any necessary steps to adjust to economic circumstances in the future.⁴⁴ Any business that has projections indicating that it would be a fully profitable enterprise for 20 years likely would not hesitate to begin operations. As is evident from the change in the rail industry over the last 20 years, businesses are continually required to adjust to changing circumstances. There is no reason to treat the hypothetical railroad differently and require it to anticipate, and plan for, all distant future events as of the date that it would begin its hypothetical service.

⁴²(...continued)

We do not agree with Santa Fe's assertion that the utility would be able to obtain retrospectively altered rate relief if traffic volumes are greater than predicted. The shipper's right to seek reparations for unreasonable rates on past movements does not extend to rates that were prescribed by the Board. To hold otherwise would mean that rate prescriptions could never be final. While the Board has the authority to reopen past decisions, that authority is seldom exercised retrospectively, and we know of no instance where the Board or its predecessor has routinely reopened administratively final rate prescriptions to order further, retroactive rate reductions. We expect that any possible further reduction in the rates prescribed for the Cholla plant in light of future developments would be restricted to prospective application. Thus, there is no disparity in treatment.

⁴³ '97 *Decision*, 2 S.T.B. at 388-89.

⁴⁴ See e.g., *West Texas Utilities Co. v. Burlington N.R.R. (West Texas)* (STB served June 25, 1996), at 4.

Santa Fe would require the shipper to prove that the hypothetical railroad would be profitable into the indefinite future. Santa Fe argues that it is necessary to project all of the SAC variables into the indefinite future, and by assuming static traffic levels concludes that the AGRR would be unprofitable in the post-analysis period.⁴⁵ Santa Fe then would have the projected shortfall in revenues passed back to the first 20 years of operation. However, as Santa Fe has demonstrated, the projections used for the post-analysis period could either increase or decrease the amount of reparations and the rate prescription.⁴⁶ While we assume that the AGRR would continue to operate beyond 2013 because many of the rail assets would continue to have serviceable lives, we find it inappropriate to speculate about how the railroad would operate in the distant future. We simply assume that the AGRR would adapt its operations in the post-analysis period to ensure that the remaining value of the assets would be recovered.⁴⁷

Santa Fe argues that the economic forecasts needed to employ a perpetual model are no more speculative than the forecasts we used in the '97 Decision. We disagree. As forecasts lengthen, the potential for divergence from actual results tends to increase. In this case, the parties agreed on a large number of forecast variables for the 20-year period.⁴⁸ The fact that the parties did not attempt to forecast variables beyond 20 years illustrates the difficulty with forecasting that far into the future.⁴⁹ As the court affirming the *West Texas* decision noted, "because the prospect of changed market conditions makes estimation of financial performance in the distant future highly speculative, there is little reason to believe that incorporating such estimates into the stand-alone analysis--in order to account for the extremely long useful life of some rail

⁴⁵ Santa Fe attempts to distinguish this case from *West Texas* by pointing out that the traffic projections here remain constant for the 20-year analysis period. This, however, is no reason to assume that AGRR's operations could never change.

⁴⁶ Santa Fe Petition, v.s. Klick at '29-34.

⁴⁷ The modified perpetual SAC model calculates the value of the assets at the end of the 20-year analysis period by dividing the required capital recovery cost for the last period in the analysis by the stand-alone railroad's real cost of capital. This procedure was developed by the ICC based on the testimony of railroad witnesses in *Nevada Power II*, 10 I.C.C.2d at 315.

⁴⁸ The parties agreed on federal tax rates, state tax rates, cost of capital, inflation in the price of rail assets, and inflation in operating expenses, all of which were used in developing the AGRR's revenue requirement. The parties disagreed on the future rate levels and tonnages shipped, which affect the revenue side of the cost/revenue comparison under our SAC methodology.

⁴⁹ Santa Fe's assertion that use of a perpetual model would not add to the complexity of the discounted cash flow (DCF) calculation is correct. Our problem with a perpetual model is not with our ability to perform the calculations but, rather, with its lack of predictive value. Indeed, Santa Fe's perpetual model would make no allowance for changes in the post-analysis period.

assets--would produce a more accurate assessment of the reasonableness of an incumbent's current rates." *Burlington N.R.R. v. Surface Transp. Bd.*, 114 F.3d 206, 215 (D.C. Cir. 1997).

IV. Alleged Technical Errors

A. Adjustment of Asset Base for Inflation

Santa Fe argues that in estimating the future value of assets, we should have incorporated data from the Association of American Railroads (AAR) Railroad Cost Recovery Index (RCRI) for 1996. Arizona counters that Santa Fe's proposal to update the RCRI, while neglecting to update other indices such as land and the RCAF, is self-serving.⁵⁰

Before issuing the '97 *Decision*, we updated the RCAF to take account of more current data that became available after the close of the record but prior to service of the decision. Accordingly, to be consistent, we will update the RCRI to reflect data that also became available prior to the issuance of the '97 *Decision*. However, to maintain consistency with the procedure used to update the RCAF, we use a 6-year average rather than the 5-year average proposed by Santa Fe.

B. Development of Annual Maximum Rates from Quarterly Results

Santa Fe points out three computational errors that we made in converting quarterly results under our SAC analysis to annual rate prescriptions.⁵¹ Arizona agrees that these were errors. Correcting these errors, we find that our prescribed rate for 1997 should be \$3.68 per ton, an increase from the \$3.54 per ton rate level set in the '97 *Decision*. This figure also reflects the update of the RCRI to include 1996 data.

C. Value of Tax Depreciation in the Post-Analysis Period

Santa Fe asserts that we erred by failing to calculate the present value of the unused tax benefits from depreciation that would be available in the post-

⁵⁰ Arizona Reply, v.s. of Crowley at 13-14. Contrary to Arizona's assertion, we did update the RCAF indices to 1996 levels in the '97 *Decision*.

⁵¹ Santa Fe Petition, v.s. Klick at 6-7.

analysis period.⁵² We disagree. If we were to separately discount the stream of annual depreciation allowances in the post-analysis period, which could be used to offset earnings generated after 2013, we would also have to separately project and discount earnings (and annual taxes due on those earnings) that the AGRR would realize in the post-analysis period. However, developing present values for various projected revenue requirements in the post-analysis period would convert our analysis to a perpetual model, which, as we have explained, would be inappropriate.

D. Impact of Jurisdictional Threshold on Determination of Maximum Rates

The "initial" SAC computation produced maximum rates for certain time periods that would have limited Santa Fe's rate to less than 180% of Santa Fe's variable cost of serving the Arizona traffic. However, as explained in the '97 *Decision*, 2 S.T.B. at 391-95, we cannot prescribe a rate below the 180% level. Therefore, in a second SAC computation, we increased the maximum rate to the 180% level in those periods where the initial computation had resulted in a lower rate level. However, without any other adjustment, increasing rates to the 180% level would result in the AGRR recovering over the 20-year period more revenues than needed to cover AGRR costs. To avoid this over-recovery, we performed an iterative process that decreased the rates in time periods where the maximum rate would have exceeded Santa Fe's 180% level, to offset the revenue gain otherwise resulting from increasing other rates to Santa Fe's 180% level.

While Santa Fe does not contest the raising of rates to 180% of its variable cost,⁵³ it argues that there should be no corresponding offset in other periods by lowering the maximum rate in quarters where the initial computation resulted in maximum rates in excess of the 180% of variable cost level. Under our multi-period DCF model, however, deficits or surpluses in any time period must be

⁵² Santa Fe Petition, v.s. of Klick at 7.

⁵³ Santa Fe argues that we did not properly quantify its variable costs for future time periods, because we failed to factor in the impact of future rail industry productivity gains. However, most of the cost indices that were applied to the AGRR's costs do not have productivity adjustments that could be used, and productivity adjustments are not available for the more specific indices that we used. Thus, it would be inappropriate to adjust Santa Fe's variable costs for productivity while ignoring the potential impact of productivity gains on AGRR's costs.

netted over the entire analysis period.⁵⁴ The iterative procedure is necessary to ensure that the cumulative revenues over the 20-year SAC analysis period would be sufficient to allow the AGRR to recover all of its costs, but no more.

Santa Fe also points out that we failed to apply the percentage rate reduction allocation in the first iteration of our SAC computation, and that in subsequent iterations we failed to fully allocate to Salt River traffic its portion of the SAC-based rate reductions. Upon examination, we agree that in deferring the percentage rate reductions to subsequent iterations in our original computations, we mistakenly combined the SAC overpayments with the surpluses resulting from applying the 180% *r/vc* rate floor to Arizona and failed to allocate to the Salt River traffic any of the SAC rate reductions for periods after the 1st quarter of 2007. We have corrected this error, so that our revised computations preserve the relationship between the cumulative revenues of the two shippers (and Santa Fe's differential pricing structure) for the full 20-year period, as we had originally intended.⁵⁵

REVISED REPARATIONS AND RATE PRESCRIPTION

For the reasons discussed above, we are revising our rate prescription and reparations calculations: (1) to reflect the update of the RCRI to include 1996 data, (2) to correct for computational errors in converting quarterly results to annual maximum rates, and (3) to correct for inadvertent misapplication of our stated procedures. The revised reparations due Arizona are based on our calculation of Arizona's SAC-based maximum rate and the actual tonnages shipped by Arizona through the second quarter of 1997.⁵⁶ The revised reparations appear in Table I on the following page.

⁵⁴ See, *Nevada Power II*, 10 I.C.C.2d at 278 ("Netting across time periods is an inherent part of any present value finance calculation.").

⁵⁵ We also have discovered and corrected another application error. In '97 *Decision*, 2 S.T.B. at Appendix F, Table F-1, column 7, we inadvertently failed to credit Arizona in 10 quarters for overpayments resulting from the imposition of the 180% rate floor.

⁵⁶ Arizona argues that, in the petition to reopen, Santa Fe improperly calculated the amount of interest due on reparations. However, Arizona suggests that we wait to rule on this matter until after our decision has been review in a court of appeals. We agree. If the parties cannot agree on the amount of reparations and interest due, they may submit their calculations for our review upon the conclusion of any judicial proceedings.

Table I

REVISED REPARATIONS

Quarterly	Arizona	Arizona's	SAC	
Period	Tonnage	Actual	Prescribed	Reparations
1/94	858,417	\$6.31	\$3.54	\$2,373,761
2/94	799,622	6.20	3.54	2,129,821
3/94	1,014,795	6.25	3.65	2,635,540
4/94	862,550	6.17	3.96	1,910,073
1/95	613,581	6.17	3.61	1,572,583
2/95	447,143	6.16	3.73	1,087,440
3/95	915,094	6.13	3.66	2,264,099
4/95	505,150	6.03	4.26	895,174
1/96	517,193	5.87	3.44	1,255,171
2/96	477,619	5.77	3.46	1,101,043
3/96	740,128	5.75	3.65	1,551,387
4/96	766,154	5.77	3.91	1,421,329
1/97	575,503	5.82	3.68	1,229,188
2/97	835,193	5.74	3.68	1,717,031

Our revised rate prescription for 1997 through 2013 is shown in Table II on the following page.

Table II
REVISED RATE PRESCRIPTION

Year	SAC Maximum Rate
1997	\$3.68
1998	3.76
1999	4.16
2000	3.93
2001	4.02
2002	4.11
2003	4.21
2004	4.30
2005	4.75
2006	4.49
2007	4.59
2008	4.69
2009	4.82
2010	4.99
2011	5.15
2012	5.33
2013	5.51

CONCLUSION

Santa Fe's petition to reopen is granted only to the extent of correcting errors in our application of the DCF model and updating the RCRI to include 1996 data. Even with these changes, we find that the challenged rates are unreasonable. Revised reparations are awarded for past movements, and revised maximum reasonable rates are prescribed for future movements. Interest is also awarded, in accordance with 49 CFR Part 1141. If the revenue and cost projections upon which these rate prescriptions are based become unrepresentative, the parties may either agree upon revisions to these prescriptions that are consistent with our method or petition the Board to reopen the proceeding.

This decision will not significantly affect either the quality of the human environment or the conservation of energy resources.

It is ordered:

1. Defendant's petition to reopen this proceeding is granted in part and denied in part.
2. Defendant will pay reparations on all movements prior to 1997 based on the revised SAC-based quarterly rate and the actual tonnage shipped by Arizona in the quarter. Defendant will pay reparations after 1996 based on the revised SAC-based annual rate and the actual tonnages shipped during the quarter.
3. Defendant will establish and maintain rates for the issue traffic that do not exceed the revised maximum reasonable annual rates prescribed in this decision.
4. This decision is effective on April 17, 1998.

By the Board, Chairman Morgan and Vice Chairman Owen.